**Responses to referees’ comments**

**(Design Optimization of Small Fishing Vessel Structures: A Case Study)**

**Reviewer #1 and #2**

We are very thankful to the reviewer for the comments and we believe that the implementation

of these suggestions will improve the manuscript. Below are our comments on the review you provided.

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| **Reviewer** | **Comment** | **Status** | **Notes** |
| **Reviewer 1** | 1. The paper is interesting and deals with the optimization of structures for small fishing vessel in terms of material selection. It is well written and presented. The results also are very useful to the readerships in the certain research area and for the fishing vessels manufacturers. The only I have to recommend to authors is to **write clearly the novelty** and a few words for the validation of the FEM calculations | Done | We have added novelty in the end of Section 1 and FEM validation in Section 3.1 |
| **Reviewer 2** | 1. In the title, it is mentioned that optimization involves "material selection." However, only two types of materials have been used, and there is no difference in the total weight, deformation, and strength-to-weight ratio, as the density, E, and Poisson's ratio are the same. This is a well-known fact. Instead, it's better to remove "material selection" from the title or add all three variables to the title. One proposed title is "Design optimization of small fishing vessel structures: A case study." | Done | We have changed the title |
| 2. Citing references in the text: Please use the Vancouver numerical system, where reference numbers occur within square brackets, like this [2]. Please change all the brackets to square brackets. | Done | We have fixed |
| 3. In Section 1, the last paragraph should elaborate on and specify the shortcomings of previous work, as presented in references 10 and 11. This will help highlight the originality and novelty of this paper, particularly concerning your optimization approach. | Done | We have added in the end of Section 1 |
| 4. In Section 2.1, the last line should mention "CO2." | Done | We have fixed |
| 5. In Section 2.2, consider including information about the frame spacing of the initial vessel in the paper. | Done | We have added |
| 6. Figure 2 should have a caption, such as "FE models of the fishing vessel (a)...." | Done | We have added |
| 7. Figures 2, 3, and 4 have not been cited in the text. | Done | We have added |
| 8. In Equation 2, parameters have not been defined in the text. Please define "w" and "t." | Done | We have added |
| 9. In Section 3.2, specific details and properties of the plate materials used in this study (i.e., MS and AH32) are not provided. It is advisable to show properties of these materials, such as yield strength, E, Poisson's ratio, density, etc. | Done | We have added Table 1 |
| 10. Table 1 should be cited in the main text, and it's advisable to add the reference in the table caption (i.e., ref 11). | Done | We have changed Table 2 to replace Table 1 |
| 11. For Table 2, clarify whether the values represent the maximum nominal stress of the frame or von Mises stress. Since there is no difference in results between the two materials due to identical properties (E, Poisson's ratio, density), it might be unnecessary to analyze both materials. | Done | We have changed Table 3 to replace Table 2. We use von-mises stress and changed the explanation. |
| 12. In Table 3 and Section 4, explain how the authors calculated the "Strength-to-weight ratio." Define what is meant by "strength" in this context and clarify whether it relates to yield strength (sigma permissible). If so, explain why the ratios are the same for both materials. | Done | We have changed Table 4 to replace Table 3. We have fixed and changed to deformation to weight ratio. Explanation already added inside paragraph |
| 13. In the Conclusions section, it is advisable to include a description of limitations and directions for future research, if applicable. | Done | We have added |